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EXAMINER	
LEE, ANDREW CHUNG CHEUNG	
ART UNIT	PAPER NUMBER
2664	

DATE MAILED: 12/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/731,827	SHINOHARA ET AL.	
	Examiner	Art Unit	
	Andrew C. Lee	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *6-14 and 21-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *6-14 and 21-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because there are typos on Fig. 1, Fig. 2, Fig. 4, Fig. 6, Fig. 22, Fig. 25, the subject matter "SUPERBISORY" should be corrected as "SUPERVISORY" . Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is

requested in correcting any errors of which applicant may become aware in the specification.

3. The disclosure is objected to because of the following informalities:

- Fig. 1, there is a typo for subject matters 14, 2, "superbisory" should be corrected as "supervisory".
- Fig. 2, there is a typo for subject matter 34, "superbisory" should be corrected as "supervisory".
- Fig. 4, there is a typo for subject matter 2A, "superbisory" should be corrected as "supervisory".
- Fig. 6, there is a typo for subject matters 14, 2B, "superbisory" should be corrected as "supervisory".
- Fig. 22, there is a typo for subject matters 14, 2G, "superbisory" should be corrected as "supervisory".
- Fig. 25, there is a typo for subject matters 14, 2H, "superbisory" should be corrected as "supervisory".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed subject matter "each of the component waveforms **except** for a low frequency of a final level". The subject matter is not disclosed explicitly and clearly in the original specification.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 21, 6, 8, 9, 10, 11, 12, 13, 14, 22, 23, 24, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benamara (US 6128413) in view of Li (US 5684693).

Regarding claim 21, Benamara discloses the limitation of a data compression system for compressing original time series data having a various waveform (Abstract, lines 1 – 3, lines 15 – 18), comprising: a compression unit configured to generate a compression code by compressing the original time series data without damaging characteristics of waveform information in the various waveform (Fig.1, element 120, data compression module; column 1, lines 27 – 28; column 3, lines 1- 7), the waveform information including a signal with a various change including one of a step-like signal change and a local signal average

value (column 1, lines 26 – 39; lines 60 – 65; column 3, lines 25 – 42); and a transmitting unit configured to transmit the compression code through a network (column 4, lines 49 – 55; Fig. 8, column 11, lines 47 – 60), wherein said compression unit is configured to perform a wavelet transform to the original time series data by using transform coefficients to decompose the original time series data into a predetermined level number of component waveforms, each of the waveforms of each level having local peak value data (column 3, lines 1 –7; lines 25 – 30; lines 26 – 29), and to extract at least one of the local peak value data of each of the component waveforms except for a low frequency of a final level (column 1, lines 50 – 63), wherein the compression code includes (1) the extracted local peak value data (column 3, lines 25 – 34), and (4) a number of decomposition levels, wherein the extracted local peak value data includes a peak value that is not less than a predetermined threshold value thereof and a position in a data-frame of each level thereof (column 3, lines 25 – 57). Benamara does not disclose expressly (2) one of the component waveforms having the low frequency of the final level, (3) a mother wavelet function code. Li discloses the limitation of (2) one of the component waveforms having the low frequency of the final level (column 2, lines 56 – 62), (3) a mother wavelet function code (column 2, lines 40 – 57). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Benamara to include a (2) one of the component waveforms having the low frequency of the final level, (3) a mother wavelet function code such as that taught by Li in order to provide an efficient data-compression method for use in transmitting data from borehole logging tools over a band-limited transmission link providing

information as to whereabouts of data values that are rejected due to thresholding (as suggested by Li, see column 3, lines 34 – 38).

Regarding claims 6, Benamara discloses the limitation of the data compression system according to claimed further comprising a decompression unit being intercommunicated through the network with the transmitting unit (Fig. 2, element 170, column 5, lines 53 – 54; Fig. 8, column 11, lines 62 - 65), said decompression unit comprising: a receiving unit configured to receive the transmitted compression code (column 4, lines 52 – 55; Fig. 8, column 11, lines 62 – 65); and an inverse wavelet transform unit configured to perform an inverse wavelet transform to the compression code to reconstruct a time series data having the characteristics of said waveform information of the original time series data (Fig. 2, element 240; column 5, lines 63 – 67; column 6, lines 1 – 11).

Regarding claim 8, Benamara discloses the limitation of the data compression system according to claimed wherein said extracted peak value data includes a peak value thereof and a position in a data-frame of each level thereon (column 3, lines 29 – 35), and Benamara does not disclose expressly the data compression system according to claimed wherein said compression unit refers a mother wavelet code transform table by using a predetermined mother wavelet function to extract a transform code corresponding to the predetermined mother wavelet- function and compresses the original time series data by using the extracted transform code, and wherein said inverse wavelet transform unit stores thereon the mother wavelet code transform table, refers the mother wavelet code transform table by using the transform code of the

compression code to extract the predetermined mother wavelet and function decompresses the compression code by using the predetermined mother wavelet code . Li discloses the limitation of the data compression system according to claimed wherein said compression unit refers a mother wavelet code transform table by using a predetermined mother wavelet function to extract a transform code corresponding to the predetermined mother wavelet- function and compresses the original time series data by using the extracted transform code (column 2, lines 40 – 67), and wherein said inverse wavelet transform unit stores thereon the mother wavelet code transform table, refers the mother wavelet code transform table by using the transform code of the compression code to extract the predetermined mother wavelet and function decompresses the compression code by using the predetermined mother wavelet code (column 3, lines 7 – 19). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Benamara to include the data compression system according to claimed wherein said compression unit refers a mother wavelet code transform table by using a predetermined mother wavelet function to extract a transform code corresponding to the predetermined mother wavelet- function and compresses the original time series data by using the extracted transform code, and wherein said inverse wavelet transform unit stores thereon the mother wavelet code transform table, refers to the mother wavelet code transform table by using the transform code of the compression code to extract the predetermined mother wavelet and function decompresses the compression code by using the predetermined mother wavelet function code such as that taught by Li in order to provide an efficient data-

compression method for use in transmitting data from borehole logging tools over a band-limited transmission link providing information as to whereabouts of data values that are rejected due to thresholding (as suggested by Li, see column 3, lines 34 – 38).

Regarding claim 9, Benamara discloses the limitation of the data compression system according to claimed wherein said extracted peak value data includes a peak value thereof and a position in a data-frame of each level thereon (column 3, lines 29 – 35), and Benamara does not disclose expressly the data compression system according to claimed further comprising a storing unit that stores thereon a mother wavelet code transform table, wherein said compression unit, when referring the mother wavelet transform table, inquires the transform code of the storing unit by using the predetermined mother wavelet function code to extract the transform code issued by the storing unit based on the mother wavelet code transform table, and wherein said decompression unit, when referring to the mother wavelet function, inquires the mother wavelet function code of the storing unit by using the transform code to extract the mother wavelet function code issued by the storing unit based on the wavelet code transform table. Li discloses the limitation of the data compression system according to claimed further comprising a storing unit that stores thereon a mother wavelet code transform table, wherein said compression unit, when referring the mother wavelet transform table, inquires the transform code of the storing unit by using the predetermined mother wavelet function code to extract the transform code issued by the storing unit based on the mother wavelet code transform table (column 2, lines 40 – 67; column 3, lines 7 – 19; column 7, lines 46 – 59; column 8, lines 41 – 45), and wherein

said decompression unit, when referring to the mother wavelet function, inquires the mother wavelet function code of the storing unit by using the transform code to extract the mother wavelet function code issued by the storing unit based on the wavelet code transform table (column 3, lines 60 – 67; column 7, lines 46 – 59). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Benamara to include the data compression system according to claimed further comprising a storing unit that stores thereon a mother wavelet code transform table, wherein said compression unit, when referring the mother wavelet transform table, inquires the transform code of the storing unit by using the predetermined mother wavelet function code to extract the transform code issued by the storing unit based on the mother wavelet code transform table, and wherein said decompression unit, when referring to the mother wavelet function, inquires the mother wavelet function code of the storing unit by using the transform code to extract the mother wavelet function code issued by the storing unit based on the wavelet code transform table such as that taught by Li in order to provide an efficient data-compression method for use in transmitting data from borehole logging tools over a band-limited transmission link providing information as to whereabouts of data values that are rejected due to thresholding (as suggested by Li, see column 3, lines 34 – 38).

Regarding claims 13, 10, 11, 12, Benamara discloses the limitation of the data compression system (Fig. 1, Abstract, lines 1 – 3, lines 15 – 18) according to claimed wherein said compression unit comprises: a first means, for each cutting out of the original time series data, for assembling the local peak values of the respective component

waveforms of the respective levels in their respective frequencies so as to generate compression codes based on the respective assembled local peak values, said compression codes correspondingly including the respective assembled local peak values, and sequentially generates one of the compression codes and transmits the generated one of the compression codes, starting from one of the compression codes corresponding to the lowest frequency up to one of the compression codes corresponding to the highest frequency (Fig. 1, element 120; column 3, lines 4 – 7; time series; lines 18 – 62); and a second means, for each cutting out of the original time series data, assembles for assembling the local peak values of the respective transform coefficients by using one of the threshold values which is sequentially selected in threshold values in descending order so that each of absolute values of each of the assembled groups of local peak values is larger than each of the selected one of the threshold values to generate compression codes based on the respective assembled groups of the local peak values, said compression codes correspondingly including the respective assembled local peak values, and sequentially generates one of the compression codes and transmits the generated one of the compression codes, starting from one of the compression codes corresponding to the largest threshold value up to one of the compression codes corresponding to the lowest threshold value (Fig. 1, element 170; column 3, lines 64 – 67; column 4, lines 1 – 48), and wherein said decompression unit is configured to receive the sequentially transmitted compression codes so as to reconstruct each of the compression codes, thereby sequentially displaying the reconstructed compression codes (column 4, lines 66 – 67; column 5, lines 1 – 8).

Regarding claim 14, Benamara discloses the limitation of the data compression system (Fig. 1, Abstract, lines 1 – 3, lines 15 – 18) according to claimed when detecting a signal change as for the original time series data on the basis of each waveform component of each level of the original time series data (column 3, lines 4 – 8; lines 25 – 29), wherein said compression unit generates the compression codes by using one of the first and second means to transmit the generated compression codes (column 3, lines 25 – 35), said decompression unit receives each of the compression codes to reconstruct each of the compression codes of each decomposition level thereby sequentially displaying the reconstructed compression codes, and evaluate, on the basis of the reconstructed time series data, validity of a control model to transmit the evaluated result to the compression unit, if necessary, reconstruct the control model and transmit the model parameter to the compression unit, and wherein said compression unit update the control model to improve control performance thereof (column 3, lines 64 – 67; column 4, lines 1 – 10; lines 66 – 67; column 5, lines 1 – 8).

Regarding claim 22, Benamara discloses the limitation of the data compression system according to claimed wherein said one of the component waveforms having the low frequency of the final level is one of a smoothed signal value and an average value of the original time series data (column 1, lines 51 – 59).

Regarding claim 23, Benamara discloses the limitation of the data compression system according to claimed further comprising: a modeling unit configured to generate a model parameter based on the control model identifying the correlation of input and output (column 3, lines 4 – 7; lines 18 – 35); and an extended compression code generating unit

configured to generate an extended compression code based on the first compression code and the model parameter (column 3, lines 42 – 62).

Regarding claim 24, Benamara discloses the limitation of the data compression system according to claimed wherein said original time series data includes a first time series data and a second time series data, the first and second time series data having a correlation of input and output as a control model with each other (column 3, lines 5 – 10; lines 25 – 35), the first time series data corresponding to the input, the second time series data corresponding to the output; said compression unit is configured to generate a first compression code by compressing the first time series data (column 3, lines 25 – 49); and said transmitting unit is configured to transmit the extended compression code through the network (column 4, lines 49 – 55).

Regarding claim 25, Benamara discloses the limitation of the data compression system according to claim 24, further comprising a decompression unit being intercommunicated through the network with the transmitting unit (Fig. 2, element 170, column 5, lines 53 – 54; Fig. 8, column 11, lines 62 - 65), the decompression unit comprising: a receiving unit configured to receive the transmitted extended compression code; a separator unit configured to separate the transmitted extended compression code into the first compression code and the model parameter (column 4, lines 52 – 67; column 5, lines 1 – 8; Fig. 8, column 11, lines 62 – 65); an inverse wavelet transform unit configured to perform an inverse wavelet transform to the first compression code to reconstruct the first time series data (Fig. 2, element 240; column 5, lines 63 – 67; column 6, lines 1 – 11; and a reconstruction unit configured to reconstruct the second

time series data based on the reconstructed first time series data and the model parameter (column 4, lines 52 – 67; column 5, lines 1 – 8).

Response to Arguments

8. Applicant's arguments with respect to claims 21, 6, 8, 9, 10, 11, 12, 13, 14, 22, 23, 24, 25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Lee whose telephone number is (571) 272-3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (571) 272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ACL Dec 06, 2005

Ajit Patel
Primary Examiner